Why do Voters Demand Universal Government Bene¯ts? ¤

Filip Palda
Ecole nationale d'administration publique
1001 Sherbrooke Street E. (Suite 3100)
Montreal, Quebec H2A 4Z1

July 1996

Abstract

Universal social bene¯ts seem to contradict important notions in economics. They are poorly targeted and must be paid for by what seem to be high taxes. This paper describes the costs of universality and then proposes two competing explanations for why an electorate might wish to pay these costs. It may be harder to identify the poor through targeted social programs than to simply give everyone social bene¯ts and withdraw part of these bene¯ts through the tax system. Or, universality may be a form of political insurance that protects any one group of voters from being exploited by others. Each conjecture leads to di®erent predictions about the manner in which government bene¯ts will vary with the incomes of the recipients. I use a model of tax and spending incidence for Canada in 1990 to see which conjecture helps best to understand the data. I ¯nd mixed evidence in favor of the notion that universality is a form of political insurance.

¤I thank John Matsusaka, Martin McGuire, Ja®er Qamar, and Gordon Tullock for helpful comments in the development of this paper. I also thank Isabella Horry for her able assistance in putting together the datasets used here.

Do improvements in social and economic objectives justify that governments now allocate and redistribute between one third and two thirds of resources in the economy? Today, many observers might answer this question in the negative.

Tanzi and Schuknecht (1995)

Introduction

Why do voters demand social programs with universal bene¯ts? This question is vexing for political economists who believe that democracies do not destroy resources needlessly. Universal social programs seem to be guilty of such destruction. They lead to large amounts of ¯scal churning: citizens are taxed then returned the money in the form of transfers. The result is a state in which there is much gross redistribution of income and little net redistribution. The price for riding this ¯scal merry-go-round is the deadweight loss of the taxes and subsidies that sit at the foundation of universality. The goal of this paper is to understand why voters are willing to tolerate these deadweight losses. Are voters su®ering from ¯scal illusion or do they have a calculated reason for supporting what seems to be a wasteful means of redistributing income? In other words, does universality represent needless waste or hidden e±ciency? The question is important for the same reason that tests of stock market e±ciency are important: we want to know if markets, political or economic, have cracks through which wealth escapes.

To test whether universality is a calculated choice by voters or represents a large and constant popular miscalculation I look at the pattern of taxes and transfers across income groups. There are two patterns to look for which might signify that voters' demands for universality are well-reasoned: °at bene¯ts and rising taxes across income groups or rising bene¯ts and rising taxes across income groups. Flat bene¯ts and rising taxes might result if voters deem universal social bene¯ts in tandem with a progressive income tax system to be the best mix of policy instruments for targeting the poor. The reasoning behind this view is that a security blanket that covers all citizens puts modest demands on government administrators to identify who is truly needy. The income tax system can be used to claw back bene¯ts above what is deemed to be a critical income level.

A di®erent pattern of bene¯ts may tell a di®erent story. If bene¯ts rise across in-

come groups, this may show that voters are demanding universality as insurance against expropriation by other income or interest groups. Members of a group run this danger because they cannot precisely measure government output. They face a signal extraction problem that forces them to rely on an estimate of whether government is spending taxes on public goods or on a sneaky redistribution of income. Universality reduces uncertainty about who is getting what | it lessens the signal extraction problem. If voters demand universality to protect themselves against sneaky expropriation, we should observe that government bene¯ts rise with income, except at the very highest levels. This pattern arises because most citizens can expect to experience rising incomes as they climb ladder of work experience. Universality will protect the gains of this progress from sneaky expropriation by other citizens (who may be rich or poor, or average). The notion that universality helps voters solve a signal extraction problem also has strong implications for the pattern of sneaky transfers that voters receive. If universality is really there to clarify who gets sneaky transfers, we should ¯nd that sneaky transfers are small for most voters. How to estimate these sneaky transfers is an important part of this paper.

I ¯nd evidence that tends to support the idea that voters demand universality as a form of political insurance. In this sense my results support the notion that universality is an e±cient political strategy for redistribution, where e±ciency is taken in the narrow technical sense that Becker (1983) and Wittman (1990) have framed it. In their view, a policy is e±cient if it does not lead to systematic, easy to spot deadweight losses that do no one any good given the political institutions in place. This does not mean that there is no room to reform those institutions. Citizens might bene¯t from a political system in which they did not have to "buy" costly insurance against net redistribution. In a wider sense, such as that set out by Rowley and Vachris (1994), universality may be an ine±cient by-product of democratic political systems.

The plan of the paper is as follows. Section 1 shows the degree of ¯scal churning in Canada in 1990 and explains what costs this churning entails. These costs are of two varieties. Universality ties a dollar of aid to the poor to a dollar of aid to higher income groups. This tie limits government from ¯nding an e±cient spending mix among all categories of public goods. Universality may also lead to a growth in government and taxes. The extra taxes produce extra deadweight losses. Section 2 explains that

voters may be willing to tolerate churning and costs it imposes for two reasons. First, universality may actually be low cost way of targeting the poor. Second, voters may demand universality as insurance against expropriation by other income or interest groups. Section 4 uses the data presented in Section 2 to distinguish which hypothesis is closer to the truth. The section maps out the level of transfers by income decile and then suggests how sneaky transfers might be measured.

1. Fiscal Churning

At first glance it seems strange that a government should take money out of someone's pocket, filter the money through a bureaucracy, and put the money back in that same person's pocket. This churning of funds is the working principle of a universal system of social benefits. Table 1 measures churning in Canada in 1990 by all levels of government (Table 2 gives demographic details on the sample used). Churning is the degree to which governments could have reduced taxes and transfers without changing the bottom line of any family's balance sheet. For example, a family receiving $1000 from the Canada Pension Plan and paying $5000 in taxes on other sources of revenue would have been equally well off without receiving any transfer and paying only $4000 in taxes. If governments had done away with all such "fiscal churning" from cash transfers spending could have been $47.1 billion lower (or 15.2% out of $309.5 billion spent by all governments in Canada in 1990).

Fiscal churning exists because some categories of government transfer are open to every citizen, without regard for his or her level of individual income or family income. This means that taxpayers will be getting cash transfers. Fiscal churning looks more intense if we broaden the categories of spending that government could have reduced in tandem with taxes, without affecting any family's bottom line. If government spending on user benefit goods such as hospitals, education, culture, and regional development are looked on as perfect substitute for tax dollars, then columns three and four in Table 1 show the degree to which Canadians governments could have reduced fiscal churning.

Any measure of fiscal churning is only as good as the incidence assumptions it uses to calculate taxes and spending. Mueller (1989) warns Public Choice researchers about

the lack of consensus on these assumptions in the public ¯nance literature. Noting this warning, I have stuck closely to assumptions used in previous major studies (see Appendix for details) of incidence, and I have not tried to introduce any innovations into this ¯eld. Even though I stick to \mainstream" assumptions, I warn that my estimates tend to favour the view that taxes are proportional to factor income. This means that I may be underestimating the degree of churning. More taxes attributed to lower income groups would lead to greater possible overall reductions in taxes and transfers in my churning calculations. Even my, perhaps modest, estimates of churning though invite speculation. What is prompting a society such as Canada with a free media, and an educated population to tolerate this ride on the ¯scal merry-go-round?

With the exception of Mueller and Murrell (1985), and Tullock (1988) Public Choice scholars devoted limited attention to this question. Most inquiries into the struggle for public resources has looked at what determines the net level of transfers. Little attention has been paid to what determines the gross level of transfers. It is this question to which I now turn.

The Cost of Universality

Figuring out why citizens might demand universality, and the ¯scal churning that comes with it, calls for a look at both sides of the social ledger. In this section I describe the costs of universal government programs. In a following section I describe the bene¯ts. The costs are easy to summarize. Universality imposes a restriction on government's use of resources and may lead to excessive taxation. The following simple description of government spending shows what sort of constraints are imposed (the description of costs also sets the scene for a later description of the bene¯ts of universality): Consider a world with two taxpayers an one poor individual who pays no taxes. Government spending is divided between public works and alms for the poor:

$$G = W + R_{poor} \tag{1}$$

Where G is the dollar budget of government, W is spending on public works, and R_{poor} is spending on the deserving poor individual. Both taxpayers fund this system through

proportional taxation such that

$$T = t(Y_1 + Y_2) \quad (2)$$

$$T = G \quad (3)$$

Where T is the sum of taxes collected, and (Y_1, Y_2) are the incomes of each taxpayer, and t is the uniform tax rate. Politicians win on a platform of maximizing voter wealth, which includes cash income but also includes deadweight losses. Government's contribution to wealth can be represented as

$$F = F(\underset{+}{W}, \underset{+}{R_{poor}}, \underset{i}{t}) \quad s.t. \quad W + R_{poor} = t(Y_1 + Y_2) \quad (4)$$

Here F is wealth created through providing public goods and publicly provided goods, and F is distributed equally among citizens. For simplicity I assume that incomes are equal and that wealth is evenly split between all citizens. If we ignore how we come to a system of proportional taxation, a politician maximizes wealth by adjusting any two of the three variables (W, R_{poor}, t). The politician strives to maximize the wealth of the median voter, which in this example we can take to be either voter 1 or voter 2. Voter 1's wealth is:

$$Y_1(1 - t) + \frac{1}{3}F \quad (5)$$

Where F¤ is the wealth government creates by manipulating taxes and spending.

Universality imposes a constraint on the maximization of F. Under universality everyone gets the same transfer R. This imposes a new constraint on politicians:

$$R_{poor} = R_1 = R_2 = R \quad (6)$$

The government's budget constraint becomes

$$W + 3R = t(Y_1 + Y_2) \quad (7)$$

The welfare of voter 1 in this case is

$$Y_1(1 - t) + \frac{1}{3}F^{¤¤} + R \quad (8)$$

Where $F^{\alpha\alpha}$ is the wealth government creates by manipulating taxes and spending under the new constraint of universality. Welfare is lower in this case than in the case of unconstrained maximization. The extra tax dollars that need to be raised to pay for the transfer to the rich dollars impose more of a cost on them than the bene¯ts of receiving a dollar of transfers because taxes carry with them a deadweight loss. As Browning (1993) has emphasized, when all citizens, rich and poor, receive a uniform transfer, the marginal social cost of one dollar of net redistribution may be as high as three-and-a-half dollars.

The constraint of universality also means that for each dollar that goes to the poor, three dollars have to be taken from public works. This gives rise to a universality "substitution e®ect" that warps spending away from the poor and more towards public works. This lowers wealth beneath what if would be if the tradeo® between alms and works were one to one as in the case of a world without universality. Reduced wealth due to this distortion in the public goods input mix and due to deadweight losses imposed by the tax system are the costs of universality.

2. The bene¯ts of universality

Why would voters accept universality if it lowers their wealth? Voters of course may be su®ering from ¯scal illusion. These days though, due perhaps to the work of Oates (1988), and Peltzman (1992), among others, the ¯scal illusion hypothesis is not in favor. Recently, Hsieh (1995) has failed to ¯nd any evidence of long-term ¯scal illusion in Canada | the country analysed in the present paper. Two explanations for universality that do not rely on ¯scal illusion, are the following:

1. The ¯rst possibility is that universality is a low cost way of getting aid quickly to the poor. The above model assumed that the poor can be immediately identi¯ed and given government help. This is a naive assumption. There is usually a lag between the onset of distress and government relief of that distress. If you have fallen on hard times you must ¯nd your way to a government o±cial and convince him or her that you qualify for help. Universality tries to minimize the o±cial's role in getting you government help.[1] If everyone automatically receives government

[1] Tullock (1988) takes a contrary view. He argues that

cheques for their children (so called baby bonuses), free health care, and education, then government need not identify the poor. It can simply give everyone the same bene¯ts and claw back these bene¯ts through the tax system. The clawback begins at a level of income that the electorate deems to be above the level of basic need. Such a view of e±ciency though may be extreme. As Sojo (1990) argues, it makes sense for governments to supplement this basic safety net with more specialised services that target the poor. These services might come on line once government has had the time to identify the distressed individual. If government mixes targeting and universality for reasons of e±ciency in reaching the poor we should observe that transfers are high and °at across the lower income deciles and lower but still °at across the higher income deciles. The low °at level of these higher deciles represents the universal system of bene¯ts that everyone enjoys, while the higher bene¯ts of low income deciles represents targeted aid such as welfare or disability payments. We should also ¯nd that taxes rise across income groups as the government claw reaches back for transfers the state gives to those who are not in need.

2. The second possibility is that universality is a device that stops income groups from secretly preying on each other. In the model developed earlier, without universality voter 1 may not know whether transfers are truly going to the poor, or whether some transfers are going to voter 2. Voter 1's ignorance may be due to random shocks in the government's public goods production function. These shocks make it hard for the voter to know precisely whether the government provided wealth $F(W, R_{poor}, t)$ is due entirely to government spending or whether fortune has lent its hand to the

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Universalization of programs often is urged on the grounds that income-tested programs in fact do not reach all the poor...[this is] an extraordinarily expensive way of increasing the number of poor people in the program. The poor people who do not participate in the program do not presumably because partly they really don't like the program, partly they have di±culty with the bureaucracy, and partly through mere ignorance. The ¯rst is not a problem since people who voluntarily and with full knowledge choose not to enter the program are presumably better o® outside it. The second would not in any way be a®ected by universalizing the program since the red tape would probably be worse in a large program than in a small program. The third calls for an advertising campaign...

public enterprise. If voter 1 cannot judge the precise cost of public goods, then he or she may be paying a price that is shaped by two forces:

$$P_1 = \text{ true per capita cost + (premium or discount)} \tag{9}$$

For example, suppose that government collects $50 in taxes from each of voters 1 and 2. Voter 1 gets a cash transfer R_1= $20 and voter 2 gets R_2 = $40. Neither voter knows precisely the level of the other's cash (or "sneaky" transfer). Is voter 1 getting a good deal? This voter cannot know unless he or she knows the true per capita cost government incurs in providing the public good. With two taxpayers, the true cost per capita is $\frac{1}{2}(W + R_{poor})$ which in this case comes to $20. The net taxes voter 1 pays are

$$P_1 = \underbrace{\$30}_{tY_1 - R_1} = \underbrace{\$20}_{true\ cost} + \underbrace{\$10}_{premium} \tag{10}$$

where R_1 are gross transfers to voter 1. This means that for voter 2, net taxes are

$$P_2 = \underbrace{\$10}_{tY_2 - R_2} = \underbrace{\$20}_{true\ cost} - \underbrace{\$10}_{discount} \tag{11}$$

Without a direct knowledge of voter 2's transfers and a precise idea of the true cost of the public good, voter 1 has trouble judging whether he is paying too much or too little for the public good. Under universality with equal bene¯ts for all, no matter what the size of transfers to voter 2, both voters would pay the true price of the public good. There would be no sneaky net transfers. There would only be ¯scal churning to the extent that the transfers of each individual not classi¯ed as poor could be reduced to zero and the taxes of this individual could be reduced by the amount of the transfer. Universality establishes clearly who gets what. It is di±cult for governments to get around this commitment because universal programs push government's claim on the private economy to its limits. Sneaky transfers outside the framework of universality impose heavy deadweight costs because universality raises the marginal cost of public funds. In a similar vein, Alesina (1990) has argued that present generations can constrain the spending patterns (and presumably the pattern of transfers) of future generations by passing on a large public debt.

In the above example, incomes are the same. When incomes di®er, each voter might accept to pay a price for the public good which is proportional to his or her income. This conjecture is in line with evidence from developed economies and is consistent with recent theoretical e®orts going back to Hochman and Rodgers (1969), in which altruistic citizens will not object to discriminatory tax pricing of public goods. Such a discriminatory, or "fair" price can be denoted as $S_i(W + R_{poor})$ where S_i is the indexed voter's share of total income produced by taxpayers. Suppose that the income of voter 1 is \$120, that of voter 2 is \$80, the tax rate is 50%. Government collects \$100 and spends half on legitimate public goods ($W + R_{poor}$) and half on sneaky transfers (R_1, R_2). Since voter 1 has three ¯fth of all income earned, his fair tax price should be \$30 and that of voter 2 should be \$20. If voter 1 gets \$20 in sneaky transfers then his or her net tax price is

$$P_1 = \underbrace{\$40}_{tY_1 \text{ ¡ } R_1} = \underbrace{\$30}_{fair\ price} + \underbrace{\$10}_{premium} \tag{12}$$

This means that voter 2 is getting \$30 in sneaky transfers and that his or her net tax price is

$$P_2 = \underbrace{\$10}_{tY_2 \text{ ¡ } R_2} = \underbrace{\$30}_{fair\ price} \text{ ¡ } \underbrace{\$10}_{discount} \tag{13}$$

Under a system of universality where bene¯ts are proportional to the income shares S, no matter what the size of the cash transfer, all voters would pay the fair price.

As in the simpler previous example where everyone's income was the same, universality solves the voter's "signal extraction problem". A similar signal extraction problem is at the heart of a macroeconomic model of aggregate supply formalized by Lucas (1973). In Lucas' model producers must judge whether the change in price they observe represents a rise in relative price or a rise in the overall price level. In the present model, the voter must judge whether the tax price imposed upon him or her represents the fair price (a component of which is included in everyone's tax price) or whether that price also includes a discount or premium particular to the voter. If we now assume that there are N voter-taxpayers whose tax bills include a component re°ecting the true price of the public good and a component

representing a discount or markup particular to the voter, then voter i must try to disentangle these components by considering the following equation (to ease notation all variables are assumed to represent current period τ values unless otherwise indicated):

$$tY_i \text{ ¡ } R_i = P_i = \underbrace{S_i(W + R_{poor})}_{fair\ price} + \underbrace{\delta_i}_{discount} \tag{14}$$

where δ is the voter's discount (either positive or negative) and $S_i = Y_i / \sum_{i=1}^{N} Y_i$ (the share of voter i's income in national income). Voter i can consider both terms to be random variables. They are random in the sense that this voter only knows that his δ_i is drawn from a distribution of possible values across the population of citizens. The discount has zero mean (because over the population net transfers must be zero) and variance of σ_δ^2. The fair cost of public goods can be expressed as

$$S_i(W + R_{poor}) = E[S_i(W + R_{poor}) \mid \Omega_{\tau-1}] + \varepsilon \tag{15}$$

where $\Omega_{\tau-1}$ is the voter's information set in the previous period and ε is a random shock that is uncorrelated with the voter's forecast. Thinking of legitimate government spending in this fashion means that we can express i's net tax price as

$$P_i = S_i(W + R_{poor}) + E[S_i(W + R_{poor}) \mid \Omega_{\tau-1}] + \varepsilon + \delta_i \tag{16}$$

Using Bayes' theorem, and linear least-squares prediction based on some knowledge of the first and second moments of ε and δ_i as well as their cross moments, the savvy voter can use the observed value of P_i to invert the logic of the above equation and get an updated estimate of legitimate government spending on his behalf $S_i(W + R_{poor})$. It can be shown (see Sargent 1979) that this updated estimate is:

$$E[S_i(W + R_{poor}) \mid \Omega_{\tau-1}, P_i] = \theta E[S_i(W + R_{poor}) \mid \Omega_{\tau-1}] + (1 \text{ ¡ } \theta)(P_i) \tag{17}$$

where $\theta = \frac{\sigma_\delta^2}{\sigma_\delta^2 + \sigma_\varepsilon^2}$ which is the fraction in conditional variation in observed price P_i due to sneaky transfers δ_i. If most of the variation in own price comes about due to variation in sneaky transfers, then the voter will give low weight to his own price in updating his estimate of legitimate government spending. With his estimate of this

legitimate spending he can get some idea of what his markup or discount is. All he has to do is subtract his observed price from his estimate of legitimate government spending:

$$P_i - E[S_i(W + R_{poor}) \mid \tau_{-1}, P_i] = \theta(P_i - E[S_i(W + R_{poor}) \mid \tau_{-1}]) \quad (18)$$

$$= \varepsilon + \delta_i \quad (19)$$

The point that emerges is that the quality (in a mean-squared error sense) of the least-squares forecast of legitimate spending (and hence of sneaky spending) will depend on the variances of the estimates of the standard errors of legitimate government spending and of sneaky transfers. The variance of the estimates will depend positively on the true standard error of sneaky transfers and legitimate spending, and negatively upon the number of observations on which voters can draw. The problem of estimation gets worse the higher one climbs in the income scale because the standard error of $S_i(W + R_{poor})$ rises in direct proportion to S_i. This is not surprising.[2] A low income voter will attribute most changes in his net tax price to changes in his discount because his low income share leaves the fair price component of his net tax price little room in which to change.

Who will want universality in such a political environment? In the present model high income groups are at high risk of paying a premium for their public goods. They have a hard time judging whether they are paying a fair price because the variance of their estimates is high. These groups are in no position to punish politicians who charge them a high premium and redistribute the money to lower income groups. In contrast, lower income groups are in a position to reward politicians for discounts in their price of public goods because these groups can make better estimates of their fair public good price. At first glance, this pattern of political risk suggests

[2] The variance of voter i^0s fair price of legitimate government spending rises not only with the variance of legitimate government spending but also with the square of the individual's income share:

$$\sigma_\varepsilon^2 = E(S_i(W + R_{poor}) - E[S_i(W + R_{poor})])^2 \quad (20)$$

$$\sigma_\varepsilon^2 = S_i^2 \sigma_{W+R_{poor}}^2 \quad (21)$$

that there would be little consensus among voters about universality. The desire for universality would be small among those at the lower end of the income scale. At second glance one must note that most voters experience gains in their income over their lives, as their work experience accumulates. This expectation of rising through the income scale might encourage voters to demand a system of taxes and redistribution in which they are protected from the risk of sneaky expropriation as their means improve. This could lead to a system of universality in which bene¯ts are geared to the incomes of all except perhaps the richest of citizens.[3]

If this reasoning is correct then we should observe that the discounts or premiums δ_i should be close to zero for all but the richest income groups. This would show that universality is doing its job of keeping hidden discounts low for most voters. The problem with this conjecture is that it is di±cult to test directly. An indirect test is to simply look at the pattern of transfers. These should rise with income. The more direct test is to regress the price each voter pays for his or her government services on his or her share of national income. In other words, estimate the equation

$$P_i = \text{taxes-transfers} = a_0 + a_1 S_i + \delta_i \tag{22}$$

The estimated coe±cient along with information on each voter's income share can then be used to estimate the discounts or premium (δ_i) each pays. Estimating this discount is the most speculative part of this paper and will come last. What follows now is an attempt to measure the transfers di®erent income groups get from government.

[3]Voters who take an inter-temporal view of redistribution and consider where they are likely to end up in the income scale, may explain the problematic observations raised by Saint-Paul (1996), who has found that changing income inequality does not lead to changing demands for income redistribution.

3. The Pattern of Bene¯ts

Background

Tracing the pattern of transfers is not a simple matter of pulling down a statistical series on government cash transfers by income group from an o±cial database. This is certainly part of the exercise, but another part of the exercise is to nuance what transfers are. As suggested earlier, some transfers masquerade as government spending on public goods. Any claim as to what quali¯es as these sneaky transfers is open to debate. Is health care a straight transfer? What about education? Spending on these services might be considered a straight transfer if, given the cash, the household would have spent it as government spent it. I do not try to enter this debate on what a transfer is. Rather, my goal is to ¯nd the pattern of di®erent categories of government expenditure by income group and to give the reader a choice of results to choose from. First I map out direct cash transfers such as the Canada Pension Plan, unemployment insurance, family allowance payments, and old age security. I then examine this pattern to see whether it is consistent with the e±ciency view of universality or with the insurance view. I repeat the exercise by including government spending on health, education, and other categories of government spending that bene¯t one individual to the exclusion of others. I call the sum of cash transfers and exclusive spending on individuals "bene¯t goods." Finally I allocate all government spending excluding debt repayment to families and test my two competing views of universality against these broad ¯gures. I leave the reader to choose which category of government spending is most relevant to the hypotheses being tested here.

The case I study is spending by all levels of government in Canada in the year 1990. The data come in part from government budgets and in part from surveys of household income and spending. My goal has been to allocate government spending to households. Households can provide part of this information directly by stating the cash transfers they received from government. What they cannot tell you is exactly how much government spent on their behalf for health, education, roads, culture, and other items. The model I use to allocate these categories of government spending is a simple variant of that used by Gillespie (1980) and more recently by Payette and Vaillancourt (1986) who reason as

follows: If we find that a household sends twice as many of its children to university as its neighbor then we "allocate" twice as much government spending on university education to that household. To get the final allocation we have to go through two steps. First find out how much each family consumes of the government service relative to other households. In other words find out the shares of each household's consumption (most of this data comes from surveys). Next, multiply each household's share by the total amount spent by all levels of government (most of this data comes from government budgetary estimates). The exercise is not to calculate the benefit a household receives from government but to trace how much money government spent on behalf of the household. The reason I do not attempt to calculate benefits | as Aron and McGuire (1970), Piggott and Whalley (1987) and several others have attempted | is that I am interested purely in the price citizens of different income levels pay for their government services. Information on this price rests in the amount of cash government gives to a household and possibly on goods and services government buys on that household's behalf.

Results

Table 3 gives estimates of transfers and taxes per economic family in each of ten income deciles. I define income as the pre-tax-and-transfer cash inflows a family gets from its labour, its holdings of capital.[4] The income of the median voter is found in the 6th income decile. Median income is not in the fifth decile because different families have different numbers of eligible voters. It appears that there are relatively more eligible voters in high income families than in low income families.

Figures 1 charts three highlighted rows from Table 3. One set of bars in Figure shows cash transfers per family across deciles. The pattern in this figure supports the efficiency view of universality more closely than it supports the insurance view. The efficiency

[4] I chose pre-transfer income to define deciles with the following example in mind. A poor family suffering from extreme physical disabilities may receive transfer payments which make that family appear to be middle or even upper-income. If there were many such families in the sample and I used post-transfer income to define deciles I might deduce from looking at the data that high income families also receive generous transfers. This would be a questionable deduction because for some families the causality runs in the opposing direction; they are high income because they receive large transfers.

view holds that transfers should be °at and high across low income groups and °at and low across high income groups. All deciles share a common base of cash transfer base in the region of $6000. The ¯rst three deciles get uniformly more transfers than higher deciles. This re°ects the fact that these groups are the main object of targeted aid that comes on top of their universal bene¯ts. This would tend to support the e±ciency view of universality.

The remaining two sets of bars tell a story more in line with the political insurance view of universality. Consider the bars showing the amount government spends on user bene¯t goods for households of di®erent income deciles. User bene¯t goods include cash transfers but also include government spending on health, education, regional, industrial, and agricultural development, culture and recreation, transportation and communication, and labour retraining and matching. These expenditures show less of a tendency to fall with income and even begin to rise past the 4th income decile. The same tendency is even more pronounced in the bars that represent total government spending on a family.

These rising pattern of bene¯ts ¯gures may support the view that universal bene¯ts are a form of political insurance. Stronger support for this view would come from asking whether the discounts or premiums most voters pay are close to zero. To this end I have run regressions of the equation (see Table 5 for a discussion of the econometric challenges posed by this estimation):

$$P_i = a_0 + a_1 S_i + \delta_i$$

Recall that P_i = taxes-transfers, of family I and S_i is family i^0s share of national income. The residuals in this regression can be interpreted as the discounts or premiums that come about through sneaky transfers, while the coe±cient (a_1) to be estimated can be interpreted as what voters believe to be government spending on public works and on needy lower income families ($W + R_{poor}$).

I have used three di®erent measures of the net price of publicly provided goods and services P_i. The ¯rst measure is the tax each household pays less its cash transfers. Figure 2 (the exact numbers appear in Table 4) maps the premiums and discounts estimated using this measure of P_i. Figure 2 also maps the discounts when taxes less the amount spent on user bene¯t goods are taken as the net price of publicly provided goods and services,

and the discounts or premiums using the household's taxes less all the money government spends on its behalf as the price of publicly provided goods and services.

Two patterns stand out from Figure 2. The first is that discounts seem "flat" across income groups when compared to the variation in transfers evident in Figure 1. Only at extremes of the income scale is δ extreme. The richest are paying a premium beyond their \fair" net tax price and the poor are receiving a significant discount. If we look at all but the bottom and top deciles, it appears that some force is at work to limit hidden gifts government can make. Universality may be the force in question.

The second thing that stands out of Figure 2 is that, as one moves to more general measures of the price of publicly provided goods and services, the profile of discounts becomes flatter. Cash transfers may underestimate the degree of universality built into government expenditures. This is why the profile of discounts when net tax price is measured as taxes less cash transfers is steeper. Health care and education may have a strong redistributive component that progresses with income. This redistributive component will tend to flatten the discounts different income groups get. This is why we observe a flatter profile of discounts in the remaining two sets of bars in Figure 2.

It is important to note here that the discounts and premiums are not themselves sneaky transfers. They are the premiums above or below the fair tax price that different income groups pay. A discount does not mean that a group is getting more in transfers than it pays in taxes. It means that the group is paying less than its fair share. Similarly a premium does not mean a group is paying more than it gets in transfers. It could mean that the group is getting less than its fair share of transfers relative to the taxes it pays. This may explain the strong positive premium for the lowest income group. This distinction between transfers and discounts or premiums is a crucial for those interested in the question of which income groups profit at the expense of others. The line in Table 3 entitled \net benefits" shows the dollar amount governments spent on the average household in a decile less that household's taxes. These net benefits are highest for the lowest income groups and fall steadily, until they turn negative at the 8th income decile. It would seem that the lower seven deciles are extorting money from the upper three deciles. This is a superficial analysis though, which ignores the degree to which all citizens agree that taxes should rise with income. Once we factor in this possibility, we can get to a

truer measure of redistribution beyond what is considered \fair."

Table 5 shows the regression results for the three measure of P_i. The regression coe±cient attached to income share is worth noting. In theory this coe±cient represents the true government price of spending on infrastructures and alms for the needy. This coe±cient comes to about 80% of total government program spending in Canada in 1990. While infrastructure and the poor are vague terms, one could make an informal case that the estimated coe±cient is not too far o® from what is believed to be the hard core of productive government spending.

Problems with the Analysis

One should look on this coe±cient and the accompanying discounts and premiums with caution. There may be omitted variables in my regressions which could bias my estimates. The degree of bias would depend on how closely these variable are correlated with the income share variable. Another way of stating this is that I am estimating the discounts and premiums based on my public information set | taken from surveys and government budgetary estimates. What really matters though is what taxpayers perceive these residuals to be. Taxpayers will estimate the residuals using their private information sets. I am inferring that they see what I see: that the results of universality are to °atten these residuals, and thus to act as a form of political insurance against sneaky transfers.

A larger problem is that my results depend on my assumptions about the incidence of taxes and government spending. I have followed Browning (1978) in assuming that consumption taxes are proportional to factor incomes. It is arguable that if the assumption is wrong my results will tend to show that the rich pay more taxes than they pay in fact. This would make my calculated discount pro¯le look steeper than it should be. So in fact this assumption I have made about consumption taxes works against my conjecture that universality is a form of social insurance. Estimating the distributional impact of government spending is an even more speculative venture. Le Grand (1985) has nicely summarized the problems that plague this ¯eld. My answer to these potential critique is that the goal of this paper has not been towards improving incidence models, but rather to take some widely used models and show how they can be applied to understand a

critical question in Public Choice.

Conclusion

Data on government transfers to Canadian households in the year 1990 may suggest that transfers serve as political insurance in that country. If true, the result is interesting because it says something about political e±ciency. When voters began to demand more publicly provided goods from government several decades ago, they may have realized that sneaky redistribution of resources was a risk that came with a growing government. The risk lies in that voters have trouble judging the value of government output. This gives politicians slack to start projects in the public interest that secretly serve private interests. Universal social programs eliminate this uncertainty by reducing government's discretion about who gets special favours. Universality could be politically e±cient in the sense that it limits rent-seeking.

The political e±ciency of universality does not mean that we are living in the best of all possible worlds. Running to the bomb shelter without losing your breath may show that you can evade bombs e±ciently. It would be nicer though to live in a world without bombs. The larger question remains of why existing political institutions expose voters to the risk of sneaky transfers. The cost of insuring against this risk through a universal social system may be steep, as my ¯nding that 15.2% of government spending may be churned suggests. Transfers for all lead to high taxes, and set most citizens on a ¯scal merry-go-round of receiving transfers and having them taxed away. Political e±ciency in the narrow sense I have explored it here may be a reaction to political ine±ciency on a larger scale. Future researchers may wish to measure the level of ¯scal churning in di®erent political systems to see what features of those system keep levels of churning low.

APPENDIX

Distribution of Government Spending and Taxes by Income groups

The method used in the present paper for distributing the tax burden can be found in the work of Browning (1978). The method for distributing the incidence of government spending follows Payette and Vaillancourt (1986), with some exceptions listed below. The trick in ¯guring out who bene¯ted from government spending is to see who is consuming services and goods that are either provided directly by government or subsidized by government. If we ¯nd that a family sends twice as many of its children to university as its neighbor then we "allocate" twice as much government spending on university education to that family. To get the ¯nal allocation we have to go through two steps. First ¯nd out how much each family consumes of the government service relative to other families. In other words ¯nd out the shares of each family's consumption (most of this data comes from surveys). Next, multiply each family's share by the total amount spent by all levels of government (most of this data comes from government budgetary estimates).

Government spending shares are allocated across families by using two Statistics Canada surveys, the Survey of Consumer Finance and the Family Expenditure Survey. The Survey of Consumer Finances covers 45,580 individual families (each is weighted so as to obtain the total number of families in the ten provinces), and details socio- economic family characteristics. The Family Expenditure Survey gives information on family expenditure for 4,856 families, including spending on automotive fuel, recreation, and medicines among others. The series are merged using a technique developed by Payette and Vaillancourt. Here is how these series are used to allocate government spending:

Cash Transfers These include Canada Pension Plan and Quebec Pension Plan payments, unemployment insurance payments, family allowance payments, old age security payments and other transfers. The incidence assumption with these transfers is that they should be completely allocated to the direct recipients. This is implicitly assuming that supply of the goods that recipients buy is perfectly elastic, so that none of the transfer is passed on to producers in form of higher prices.

Health The assumption here is that expenditures on health are made on behalf of those who consume health services (this of course neglects the possibility that health has public goods features which also bene¯t those who do not directly consumer health services). Who consumes these services is catalogued in part by a Statistics Canada study of hospital expenditure by age group (Statistics

Canada, catalogue 83-522E "An Analysis of Hospital expenditures in Canada") which is then merged with the population data from the survey of consumer ¯nances.

Education It is assumed that education expenses are proportional to the number of people in the family who are attending school. The surveys used show the number of students attending a elementary, secondary, and post-secondary school and these data are used to allocate total government spending on schooling. This of course neglects the possibility that schooling has public goods features which also bene¯t those who do not have children attending school.

Regional Planning and Development and Resource Conservation and Industrial Development (specifically Agriculture, Tourism, and Trade and Industry) Expenditures on agriculture are assumed to be made on behalf of farmers and are allocated equally to all families reporting net farm self-employed income in the Survey of Consumer Finances. Regional planning and development chie°y covers municipal public works and could be distributed on a per household basis. Trade and industry is a more direct help to business and could thus be distributed by a series on dividends. Fifty percent of the sum of regional planning and development and trade and industry (including tourism) is allocated by capital income and the remaining ¯fty percent is allocated across families by the series on total consumption. The ¯rst series come from the Survey of Consumer Finances and the second is derived from the Family Expenditure Survey.

Labour The assumption is that expenditures in this category are made on behalf of labour and thus are allocated directly to labour using a series on wages and salaries from the Survey of Consumer Finances. To the extent that these expenditures are made to trainees and the unemployed, this series will understate expenditures made on behalf of the lower income groups.

Housing Government housing expenditures are distributed by the series "Other Government Transfer Payments" from the Survey of Consumer Finances.

Culture and Recreation The assumption is that culture and recreation expenditures are made on behalf of those people who consume culture and recreation services. Thus, these expenditures should be allocated directly to them. Expenditures are distributed across families by the series, "Consumption of Recreation," derived from the Family Expenditure Survey, which covers everything from movies and ballets to camping equipment and stereos.

Transportation and Communications Expenditures under transportation and communications are broken down into two categories: highway and other. Highway expenditures are on highways, roads, and road maintenance. Other expenditures are on air, rail, and water. Who bene¯ts from these expenditures? Four groups are identi¯ed under the sub-function highway. Two per cent of highway expenditures are allocated to national defense as that is approximately the expenditure on defense as a percentage of Gross Domestic Product. National defense is distributed proportionately across individuals. Following Gillespie (1980) two other groups are non-users and road-users. He allocates one third of government expenditures to non-users and two thirds to road-users. The logic is that the non-user group that bene¯ts are property owners, that is their property values are enhanced by access to roadways. These non-user bene¯ciaries can be identi¯ed by their capital income as listed in the Survey of Consumer Finances. The other group road-users can be further sub-divided into two groups: those who bene¯t from the lower prices of goods transported via roads and those who consume road services to travel, to go to work. One third of the two thirds set aside for road-users is allocated to those bene¯ting from the lower price of transported goods by a series on total consumption from the Family Expenditure Survey. The remainder is allocated to consumption of road services, which is proxied by the consumption of automotive fuel. This series is derived from the Family Expenditure Survey. Other transportation is distributed equally across individuals.

Environment, Foreign A®airs and International Assistance, General Services, Other, Protection of Persons and Property, Research Establishments, Resource Conservation and Industrial Development net of Agriculture, Tourism, and Trade and Industry These categories of expenditure about as close as one can get to pure public good spending. So the approach here has been to allocate spending on these categories proportionally across families.

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TABLE 1

WHAT CANADIAN HOUSEHOLDS IN DIFFERENT INCOME DECILES ON AVERAGE GOT OUT OF GOVERNMENT EXPENDITURES IN 1990 (DOLLARS)

Decile	1	2	3	4	5	6	7	8	9	10
User Bene¯t Goods	21,535	20,076	18,547	17,168	17,474	17,652	19,028	19,938	20,518	24,190
Of which: Cash Transfers	13,123	11,360	9,613	7,370	6,772	5,786	5,776	5,599	5,248	6,078
Public Goods:	3,751	3,972	4,355	4,913	5,356	5,927	6,534	6,879	7,094	7,414
Total Bene¯ts	25,311	24,047	22,903	22,080	22,830	23,578	25,562	26,817	27,612	31,604
Tax	343	2,476	6,786	10,900	15,378	20,130	25,493	31,725	41,385	74,061
Net Bene¯ts	24,957	21,572	16,117	11,180	7,452	3,448	69	-4,908	-13,772	-42,457

Note: There are a total of 45,580 families in the sample. Statistics Canada has assigned a weight to each to make the sample representativ of the total population. Cash Transfers are a subset of all bene¯t goods and include cash received from unemployment insurance, Canad and Quebec pension plans, family allowances, old age security, and "other transfers". The remaining components of bene¯ts goods are th amounts government spent on health, education, resource conservation, industrial development, labor, housing, culture and recreatio transportation and communication. Public goods include spending by all levels of government on the environment, general service protection of persons and property, research establishments, foreign a®airs and international assistance. The category "Total Bene¯ts" the sum of government spending on public goods, cash transfers and bene¯t goods. The values are dollar value averages for households each decile.

TABLE 2

DECILE AVERAGE OF HOUSEHOLD PREMIUMS AND DISCOUNTS (DOLLARS) ESTIMATED BY OLS AND WLS FROM THE SNEAKY TRANSFER EQUATION (CANADA 1990)

$$P_i = a_0 + a_1 S_i + a_2 PROVINCE + \delta_i$$

Decile	1	2	3	4	5	6	7	8	9	1
1990 $ Discount or Premium estimated under OLS when										
Net Tax = Taxes minus	-2,440	-2,523	-1,370	5	385	1,226	1,295	1,105	1,444	59
Cash Transfers	(7,838)	(9,886)	(9,440)	(9,506)	(9,102)	(8,051)	(8,902)	(8,327)	(9,690)	(16,24
Net Tax = Taxes minus	-1,859	-1,343	115	1,104	1,011	1,148	313	-334	-78	-46
Value of Bene¯t Goods	(9,024)	(12,329)	(13,233)	(13,487)	(13,826)	(11,786)	(12,965)	(11,283)	(13,024)	(17,94
Net Taxes = Taxes Minus	-1,026	-588	735	1,344	1,012	729	- 456	-1,177	-819	-10
Value of Government Spending	(9,898)	(13,860)	(15,320)	(15,654)	(16,198)	(13,867)	(15,276)	(13,015)	(15,028)	(19,22
1990 $ Discount or Premium estimated under WLS when										
Net Tax = Taxes minus	-4,257	-3,259	-2,109	-720	-300	562	665	481	869	18
Cash Transfers	(7,838)	(9,886)	(9,440)	(9,506)	(9,102)	(8,051)	(8,902)	(8,327)	(9,690)	(16,24
Net Tax = Taxes minus	-3,113	-1,858	-354	681	635	824	39	- 567	-225	-24
Value of Bene¯t Goods	(9,024)	(12,329)	(13,233)	(13,487)	(13,826)	(11,786)	(12,965)	(11,283)	(13,024)	(17,94
Net Tax = Taxes minus	-1,601	-295	982	1,540	1,155	820	-419	- 1,223	-954	-49
Value of Government Spending	(9,898)	(13,860)	(15,320)	(15,654)	(16,198)	(13,867)	(15,276)	(13,015)	(15,028)	(19,22

Note: The above values are the estimated residuals δ, drawn from the regression equation $P_i = a_0 + a_1 S_i + a_2 PROVINCE + \delta_i$. Values in brackets as standard deviations from the mean. Please see Table 3 for estimates of the OLS and WLS regressions from which these residuals have been drawn. The numbers drawn from the OLS estimation are represented in Figures 2a and 2b.

TABLE 3

ORDINARY AND WEIGHTED LEAST SQUARE REGRESSION ESTIMATES OF THE SNEAKY TRANSFER EQUATION FOR CANADA IN 1990 (USING THREE DIFFERENT CONCEPTS OF NET TAX PRICE OF GOVERNMENT SERVICES):

$$P_i = a_0 + a_1 S_i + a_2 PROVINCE + \delta_i$$

	Net Tax Price Concept		
	Taxes less Cash Transfers	Taxes less Amount Spent on Bene¯t Goods	Taxes less All Government Spending on the Household
	Ordinary Least Squares		
Independent Variable			
Share of Household's Income	254,502,702,254	220,667,126,417	204,753,043,051
in National Income (S_i)	(38,057,300)	(49,883,165)	(58,215,715)
British Columbia Dummy	-9,813	-17,805	-20,843
	(11)	(14)	(16)
Alberta Dummy	-7,848	-19,719	-23,442
	(12)	(16)	(18)
Saskatchewan Dummy	-8,712	-21,793	-25,241
	(19)	(25)	(29)
Manitoba Dummy	-10,701	-20,942	-25,119
	(18)	(24)	(27)
Ontario Dummy	-9,165	-17,034	-21,101
	(7)	(10)	(11)
Quebec Dummy	-8,341	-16,136	-20,281
	(8)	(10)	(11)
Number of Observations	45,580	45,580	45,580
$\overline{R}^2$	0.85	0.67	0.55
Signi¯cance of F-statistic	0.000	0.000	0.000
	Weighted Least Squares		
Share of Household's Income	254,748,286,987	220,215,051,671	209,769,152,277
in National Income (S_i)	(32,870,143)	(43,304,483)	(50,175,107)
British Columbia Dummy	-10,058	-17,811	-21,449
	(12)	(16)	(18)
Alberta Dummy	-6,502	-18,612	-22,969
	(13)	(18)	(20)
Saskatchewan Dummy	-8,550	-22,143	-26,064
	(22)	(29)	(33)
Manitoba Dummy	-10,449	-20,951	-25,799
	(20)	(27)	(31)
Ontario Dummy	-8,135	-15,706	-20,554
	(8)	(11)	(12)
Quebec Dummy	-7,038	-15,018	-19,857
	(9)	(12)	(13)
Number of Observations	45,580	45,580	45,580
$\overline{R}^2$	0.92	0.78	0.68
Signi¯cance of F-statistic	0.000	0.000	0.000

Note: Variables in brackets are standard errors of the coe±cient estimates. There are a total of 45,580 families in the sample. Statistics Canada has assigned a weight to each to make the sample representative of the total population. Three di®erent net tax price concepts were used (see text for details). The weighted least squares regression was estimated to account for the possibility of heteroskedasticity. The weight used was the inverse of the square root of the households share of income in national income.

TABLE 4

DECILE AVERAGE OF HOUSEHOLD PREMIUMS AND DISCOUNTS ESTIMATED BY OLS AND WLS FOR (CANADA 1990) FROM THE SNEAKY TRANSFER EQUATION

$$P_i = a_0 + a_1 S_i + a_2 PROVINCE\delta_i$$

Decile	1	2	3	4	5	6	7	8	9	10
1990 $ Discount or Premium estimated under OLS when										
Net Tax=Taxes minus Cash Transfers	-6,211	-4,767	-3,784	-2,062	-1,612	-491	-300	-166	609	550
Net Tax=Taxes minus Value of Bene¯t Goods	-6,897	-5,300	-3,933	-2,316	-2,135	-1,406	-1,992	-1,967	-791	683
Net Taxes=Taxes Minus Value of Government Spending	-6,532	-5,051	-3,905	-2,539	-2,608	-2,167	-3,149	-3,139	-1,722	790
1990 $ Discount or Premium estimated under WLS when										
Net Tax=Taxes minus Cash Transfers	-6,211	-4,767	-3,784	-2,062	-1,612	-491	-300	-166	609	550
Net Tax=Taxes minus Value of Bene¯t Goods	-6,897	-5,300	-3,933	-2,316	-2,135	-1,406	-1,992	-1,967	-791	683
Net Tax=Taxes minus Value of Government Spending	-6,532	-5,051	-3,905	-2,539	-2,608	-2,167	-3,149	-3,139	-1,722	790

Note: The above values are the estimated residuals δ, drawn from the regression equation $P_i = \alpha S_i + \delta_i$. Please see Table 5 for estimates of the OLS and WLS regressions from which these residuals have been drawn. The numbers drawn from the OLS estimation are represented in Figure 2.

TABLE 5

ORDINARY AND WEIGHTED LEAST SQUARE REGRESSION ESTIMATES OF THE SNEAKY TRANSFER EQUATION FOR CANADA IN 1990 (USING THREE DIFFERENT CONCEPTS OF NET TAX PRICE OF GOVERNMENT SERVICES):

$$P_i = a_0 + a_1 S_i + a_2 PROVINCE + \delta_i$$

	Net Tax Price Concept		
	Taxes less Cash Transfers	Taxes less Amount Spent on Bene¯t Goods	Taxes less All Government Spending on the Household
	Ordinary Least Squares		
Independent Variable			
Share of Household's Income	254,502,702,254	220,667,126,417	204,753,043,051
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	(18)	(24)	(27)
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	(7)	(10)	(11)
Quebec Dummy	-8,341	-16,136	-20,281
	(8)	(10)	(11)
Number of Observations	45,580	45,580	45,580
$\overline{R}^2$	0.85	0.67	0.55
Signi¯cance of F-statistic	0.000	0.000	0.000
	Weighted Least Squares		
Share of Household's Income	254,748,286,987	220,215,051,671	209,769,152,277
in National Income (S_i)	(32,870,143)	(43,304,483)	(50,175,107)
British Columbia Dummy	-10,058	-17,811	-21,449
	(12)	(16)	(18)
Alberta Dummy	-6,502	-18,612	-22,969
	(13)	(18)	(20)
Saskatchewan Dummy	-8,550	-22,143	-26,064
	(22)	(29)	(33)
Manitoba Dummy	-10,449	-20,951	-25,799
	(20)	(27)	(31)
Ontario Dummy	-8,135	-15,706	-20,554
	(8)	(11)	(12)
Quebec Dummy	-7,038	-15,018	-19,857
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Number of Observations	45,580	45,580	45,580
$\overline{R}^2$	0.92	0.78	0.68
Signi¯cance of F-statistic	0.000	0.000	0.000

Note: Variables in brackets are standard errors of the coe±cient estimates. There are a total of 45,580 families in the sample. Statistics Canada has assigned a weight to each to make the sample representative of the total population. Three di®erent net tax price concepts were used (see text for details). The weighted least squares regression was estimated to account for the possibility of heteroskedasticity. The weight used was the inverse of the square root of the households share of income in national income.